United States General Accounting Office

GAO

Report to the Special Committee on the Year 2000 Technology Problem, U.S. Senate

May 1999

YEAR 2000 COMPUTING CRISIS

Readiness of the Oil and Gas Industries

GAO/AIMD-99-162

GAO

United States
General Accounting Office
Washington, D.C. 20548

Accounting and Information
Management Division

B-282589

May 19, 1999

The Honorable Robert F. Bennett
Chairman
The Honorable Christopher Dodd
Vice Chairman
Special Committee on the
Year 2000 Technology Problem
United States Senate

As we move into the next century, a continuous, adequate supply of oil and gas is critical for our national economy and the safety and well-being of the public. At your request, we identified the oil and gas power industries' vulnerability to Year 2000 problems and the reported status of Year 2000 readiness. On April 12, 1999, we briefed your office on the results of our work. The briefing slides are included in appendix I.

This report provides a high-level summary of the information presented at that briefing, including background information, Year 2000 vulnerabilities, and the reported readiness status of the oil and gas industries. This report also presents the suggestions we made to the Oil and Gas Working Group of the President's Council on Year 2000 Conversion concerning (1) performing risk assessment scenarios for the impact of potential Year 2000 failures on the oil and gas industries and (2) developing national-level contingency plans.

Results in Brief

All phases of operations in the oil and gas industries--from production to distribution--use computer systems and equipment that are subject to Year 2000 failures. While the domestic oil and gas industries have reported that they have made substantial progress in making their equipment and systems ready to continue operations into the year 2000, risks remain. In February 1999, following an industrywide survey, the nation's oil and gas industries reported that, on average, they were 40 percent finished validating their embedded systems. However, over a quarter of the oil and gas industries reported that they did not expect to be Year 2000 ready until the second half of 1999—leaving little time for resolving unexpected problems.

Because over half of our oil is imported, the nation is vulnerable to Year 2000 failures of oil production and transportation in other countries. However, little is known about the Year 2000 readiness of foreign oil

suppliers. The Oil and Gas Working Group has appointed a subgroup to collect Year 2000 readiness information on foreign oil suppliers; however, the group has no plans to issue a country-by-country assessment.

While individual domestic companies reported that they are developing Year 2000 contingency plans, there are no plans to perform a national-level risk assessment and develop contingency plans to deal with potential shortages or disruptions in the nation's overall oil and gas supply.

Background

Although there are thousands of independent oil and gas producers in the United States, the industries are dominated by 24 large companies. In 1997, these 24 companies produced about half of U.S. crude oil and natural gas liquids, including ethane, propane, and butane, and 43 percent of the nation's natural gas. In 1997 oil, natural gas, and natural gas plant liquids made up about 63 percent of the nation's energy consumption.

The United States is one of the largest petroleum producers in the world, averaging 6.4 million barrels a day in 1997. However, it uses more than it produces, requiring net imports of 8 million barrels of crude oil a day--about 56 percent of consumption. The top five foreign crude oil suppliers provide about two thirds of total U.S. imports. Imported oil is transported by pipelines and marine tankers. Most of the marine tankers are under foreign registry.

Oil and Gas Industries Are Vulnerable to Year 2000 Failures

The oil and gas industries are dependent on computer control systems and embedded systems that are susceptible to Year 2000 failures. The industries' analysis has shown that Year 2000 failures can occur at many links in the chain of oil and gas operations. The oil and gas industries rely on computer monitoring and control systems, including supervisory control and data acquisition systems (SCADA) and embedded devices. SCADA systems monitor and control remote terminal units and equipment that may also have date-sensitive embedded systems.

Virtually all of the SCADA systems and many of the devices use embedded microprocessors and systems that may have, or are known to have, Year 2000 problems. All phases of the petroleum production cycle--oil and gas extraction, refining, transportation, and delivery--use control systems and equipment that are subject to Year 2000 failures.

Resolution of Year 2000 problems of computer systems and equipment used in the oil and gas industries is essential for a dependable supply of petroleum for transportation, industrial operations, home heating, and other activities that affect our daily lives. The President's Council on Year 2000 Conversion--working with the Federal Energy Regulatory Commission and oil and gas industry associations--is assessing the industries' progress in addressing Year 2000 issues. This is consistent with recommendations that we made to the President's Council in April 1998 to institute a sector-based approach with needed public/private partnerships and make assessments of industry readiness.[1]

Substantial Progress Reported But Risks Remain

The oil and gas industries report substantial progress in ensuring that critical equipment and systems are Year 2000 ready, but risks remain. The industries reported that they are addressing the Year 2000 problem in five sequential phases: (1) planning, (2) inventory, (3) assessment, (4) remediation, and (5) validation. In February 1999, the Oil and Gas Working Group reported the findings of its second survey. The group surveyed 2,500 companies and received responses from about 1,000, representing about 88 percent of U.S. oil and gas consumption.

Survey respondents reported that Year 2000 readiness work on about 40 percent of embedded systems was in the validation phase as of January 1999. A portion of the industries are not expected to achieve Year 2000 readiness for embedded systems until the second and third quarters of 1999, with about 72 percent of companies expecting to have their embedded systems Year 2000 ready in the 2nd quarter, and 94 percent in the 3rd quarter.

While the domestic oil and gas industries are addressing the Year 2000 problem, little is known about the Year 2000 readiness of foreign oil suppliers. The Oil and Gas Working Group has a subgroup collecting Year 2000 information on foreign oil suppliers, but the group has no plans to issue a country-by-country assessment. If the flow of foreign oil imports is interrupted, oil can be supplied by the Strategic Petroleum Reserve. The Reserve, with nearly 600 million barrels of oil, can supply--at a maximum

[1] Year 2000 Computing Crisis: Potential for Widespread Disruption Calls for Strong Leadership and Partnerships (GAO/AIMD-98-85, April 30, 1998).

sustained rate--about 3.9 million barrels per day for about 90 days, and at lesser rates for up to 2 years.[2]

Individual companies reported that they are developing contingency plans, and the oil and gas industries expect to have about 55 percent of their contingency plans ready in June and 97 percent ready in September 1999. However, there are no plans to perform a national-level risk assessment and develop contingency plans to deal with potential shortages or disruptions in the nation's oil and gas supply.

Suggested Actions

As discussed in the briefing, in order to reduce the Year 2000 risk to the nation's oil and gas supplies, we met with the Oil and Gas Working Group of the President's Council, and suggested that they

- work with industry associations to perform national-level risk assessments and develop and publish credible, national-level scenarios for the impact of potential Year 2000 failures on the oil and gas industries, and
- develop national-level contingency plans, including provisions for using the crude oil stored in the Strategic Petroleum Reserve, to deal with potential interruptions in oil imports.

The group generally agreed with these suggestions. The members noted that the scope and focus of the suggested national-level risk assessment has not been defined.

Objectives, Scope, and Methodology

As requested, our objectives were to identify the oil and natural gas industries' vulnerability to Year 2000 problems and the reported status of Year 2000 readiness. To identify Year 2000 vulnerabilities in the industry, we reviewed federal agency and industry associations' publications on the structure of the industry and the use of date-dependent embedded systems in the technical infrastructure. We also visited selected private sector organizations that produce, refine, transport, and distribute oil and natural gas to obtain information about the extent of embedded systems' vulnerabilities.

[2] The ability of the Strategic Petroleum Reserve to supply oil in an emergency was demonstrated during two test sales in 1985 and 1990, and during the 1991 Desert Storm conflict.

To identify the reported status of Year 2000 readiness, we reviewed and analyzed industry survey data collected by the Oil and Gas Working Group of the President's Council on Year 2000 Conversion. Because of the large volume of survey respondents and our limited access to source data, we did not validate the accuracy of reported information. We conducted our work at the Departments of Energy, the Interior, and Transportation; the Federal Energy Regulatory Commission; the Alyeska Pipeline Service Company; the Joint Pipeline Office (a consortium of federal and state of Alaska agencies); selected oil and gas companies; selected municipal gas utilities; and four oil and gas industry associations that conducted surveys for the Oil and Gas Working Group of the President's Council. We performed our work from August 1998 through April 1999 in accordance with generally accepted government auditing standards.

We provided a copy of our briefing materials, which were used in preparing this report, to the Oil and Gas Working Group of the President's Council. Selected members of the group gave us oral comments on the briefing, which have been incorporated into this report.

We are providing copies of this report to John Koskinen, Chairman of the President's Council on Year 2000 Conversion; the Honorable Bruce Babbitt, Secretary of the Interior; the Honorable Bill Richardson, Secretary of Energy; the Honorable William S. Cohen, Secretary of Defense; the Honorable Madeleine K. Albright, Secretary of State; the Honorable Rodney E. Slater, Secretary of Transportation; the Honorable James J. Hoecker, Chairman, Federal Energy Regulatory Commission; David J. Barram, Administrator, General Services Administration; and other interested parties. Copies will also be made available to others upon request.

We appreciate the help and cooperation extended to our audit team by leading industry associations--the American Petroleum Institute, American Gas Association, American Public Gas Association, Gas Research Institute, Interstate Natural Gas Association of America, Natural Gas Council, and the National Petroleum Council.

We would also like to express our appreciation to the following organizations: the Alyeska Pipeline Service Company, Anchorage, Alaska; Texaco Exploration and Production, Inc., New Orleans, Louisiana; Motiva Enterprises LLC, Convent, Louisiana; Consolidated Edison Company of

New York, New York; Easton Utilities, Easton, Maryland; and Consolidated Natural Gas Company, Leesburg, Virginia.

If you have any questions on matters discussed in this letter, please call me at (202) 512-6253, James R. Hamilton, Assistant Director, at (202) 512-6271, or Mirko J. Dolak, Technical Assistant Director, at (202) 512-6362. We can also be reached by e-mail at *willemssenj.aimd@gao.gov, hamiltonj.aimd@gao.gov,* and *dolakm.aimd@gao.gov.* Other major contributors to this report are listed in appendix II.

Joel C. Willemssen
Director, Civil Agencies Information Systems

Briefing on Oil and Gas Industries' Year 2000 Readiness

GAO Accounting and Information Management Division

Briefing on Year 2000 Readiness of the Oil and Natural Gas Industries

April 12, 1999

Presented to the Senate Special Committee on the Year 2000 Technology Problem

GAO Purpose

Purpose of briefing is to provide the results of our review of the Year 2000 readiness of the oil and natural gas industries.

- Objectives, scope, and methodology
- Background
- Year 2000 vulnerabilities
- Federal and industry efforts to assess Year 2000 status
- Reported Year 2000 readiness

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GAO Objectives

The review objectives were to identify

- Year 2000 vulnerabilities in the oil and natural gas industries and
- the reported status of Year 2000 readiness.

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GAO Scope and Methodology

In assessing the oil and gas industry's vulnerability to Year 2000 problems, we reviewed

- federal agencies' and industry associations' literature on the structure of the industries,
- searched and reviewed related documents identified through the Internet, and
- visited selected private sector organizations that produce, generate, transport, and distribute oil and natural gas.

To identify the status of Year 2000 readiness, we reviewed and analyzed industry survey data collected by the Oil and Gas Working Group of the President's Council on Year 2000 Conversion.

Because of the large volume of survey respondents and our limited access to private sector source data, we did not validate these data.

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GAO Scope and Methodology (cont'd)

In the federal sector, we conducted our work at the

- Department of Energy
- Department of the Interior
- Department of Transportation
- Federal Energy Regulatory Commission
- Joint Pipeline Office (a consortium of federal and state of Alaska agencies).

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GAO Scope and Methodology (cont'd)

In the private sector, we conducted our work at the

- Alyeska Pipeline Service Company,
- American Gas Association,
- American Petroleum Institute,
- American Public Gas Association,
- Gas Research Institute,
- Interstate Natural Gas Association of America,
- Natural Gas Council, and
- National Petroleum Council.

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GAO Scope and Methodology (cont'd)

To obtain information about the industry's Year 2000 efforts, we also visited an offshore production platform, an oil refinery, a natural gas pipeline, and local natural gas distribution sites. These included

- Texaco's Tiger Shoal platform, Gulf of Mexico,
- Motiva Enterprises LLC Refinery, Convent, Louisiana,
- Consolidated Natural Gas Company's pipeline compression station, Leesburg, Virginia,
- Easton Utilities, Easton, Maryland (a municipal natural gas distributor), and
- Consolidated Edison Company of New York, New York (an investor-owned natural gas distributor).

We performed our work between August 1998 and April 1999 in accordance with generally accepted government auditing standards.

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GAO Background - Industry Structure

Although there are thousands of independent oil and gas producers in the United States, the industries are dominated by 24 large companies. In 1997, these 24 companies produced 49 percent of the U.S. crude oil and natural gas liquids and 43 percent of the U. S. natural gas.

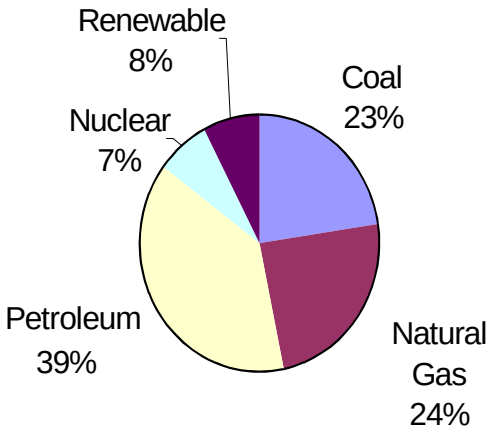
The United States is one of the largest petroleum producers in the world, averaging 6.4 million barrels a day in 1997. However, it uses more than it produces, requiring net imports of 8.0 million barrels of crude oil a day--about 56 percent of consumption.

The Trans-Alaska Pipeline transports about 20 percent of the nation's domestic oil.

8

GAO Background - U.S. Energy Consumption

U.S. Energy Consumption by Source, 1997



Source: Energy Information Administration, Department of Energy

In 1997 petroleum and natural gas made up about 63 percent of the nation's energy consumption

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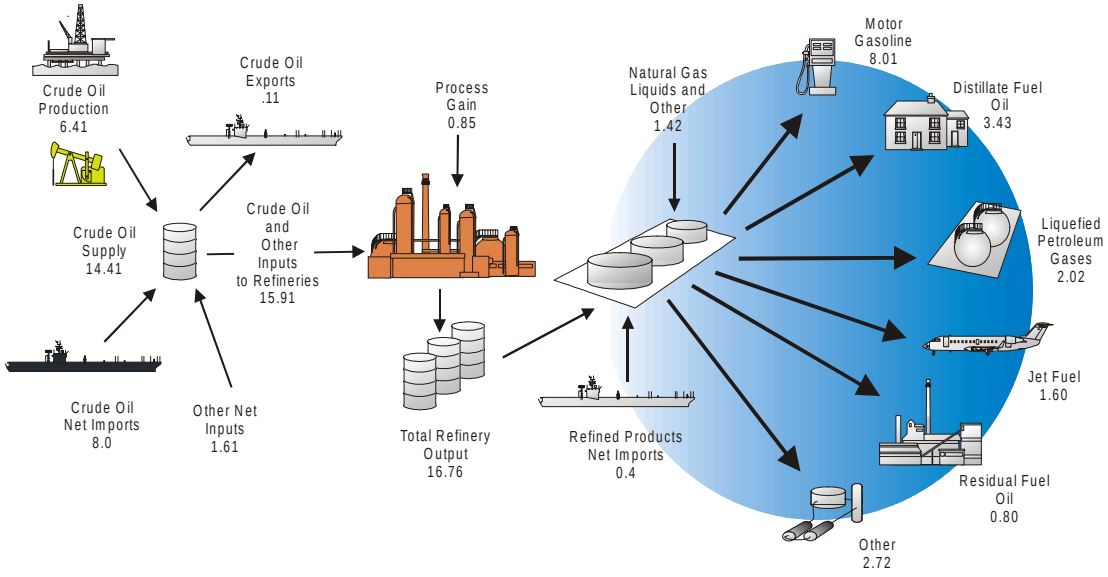
GAO

Background - Petroleum Flow, 1997 (million barrels per day)

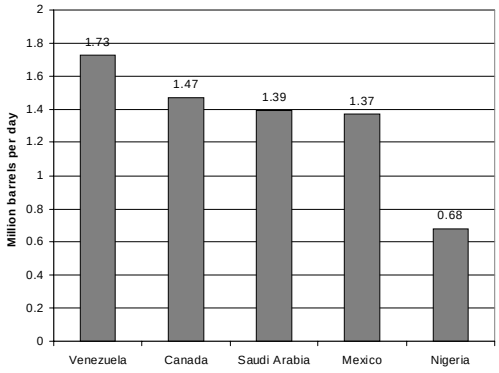


Adapted from: Petroleum 1996, Issues and Trends, September 1997, and from the Annual Energy Review, 1997, Energy Information Administration

10

GAO Background - Foreign Crude

Top Five Foreign Crude Oil Suppliers to U.S., 1997



Source: Energy Information Administration, Department of Energy

Imported oil is transported by pipelines and marine tankers. Most of the marine tankers are under foreign registry.

The top five foreign crude oil suppliers provided about 67 percent of the total U.S. imports.

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GAO Background - Oil Exploration and extraction

Offshore Oil Platform

Source: Energy Information Administration, Department of Energy

In 1997, about 820 onshore drilling rigs and about 120 offshore drilling rigs were being used.

About a third of the world's oil comes from offshore wells mainly in the North Sea, the Persian Gulf, and the Gulf of Mexico.

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GAO Background - Oil Transportation

Oil Pipeline

Source: Energy Information Administration, Department of Energy

About 114,000 miles of pipeline, operated by about 160 companies, bring oil from production fields to refineries.

An oil pipeline delivery system consists of pumping stations, storage tanks, and transfer terminals.

Most pipelines are underground, with the notable exception of the 800-mile Trans-Alaska pipeline which has a large portion above ground to avoid damaging the permafrost.

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GAO Background - Oil Refining

Oil Refinery

Source: Energy Information Administration, Department of Energy

Oil refining involves highly automated operations that convert crude oil into a variety of products including gasoline, aviation fuel, and home heating oil.

Refineries are also equipped with sophisticated pollution control systems that capture emissions of toxic chemicals, extract and recycle hazardous wastes, and purify waste water.

There are over 150 operating refineries in the United States.

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GAO Background - Oil Distribution

Oil Tank Farm and Pipeline Complex

Source: Energy Information Administration, Department of Energy

Refineries ship directly to major customers including power plants, chemical factories, and airports, as well as to terminals or bulk plants for temporary storage.

Railroads and trucks provide transportation for the final leg of the journey, including deliveries to distributors, dealers, and almost 190,000 service stations.

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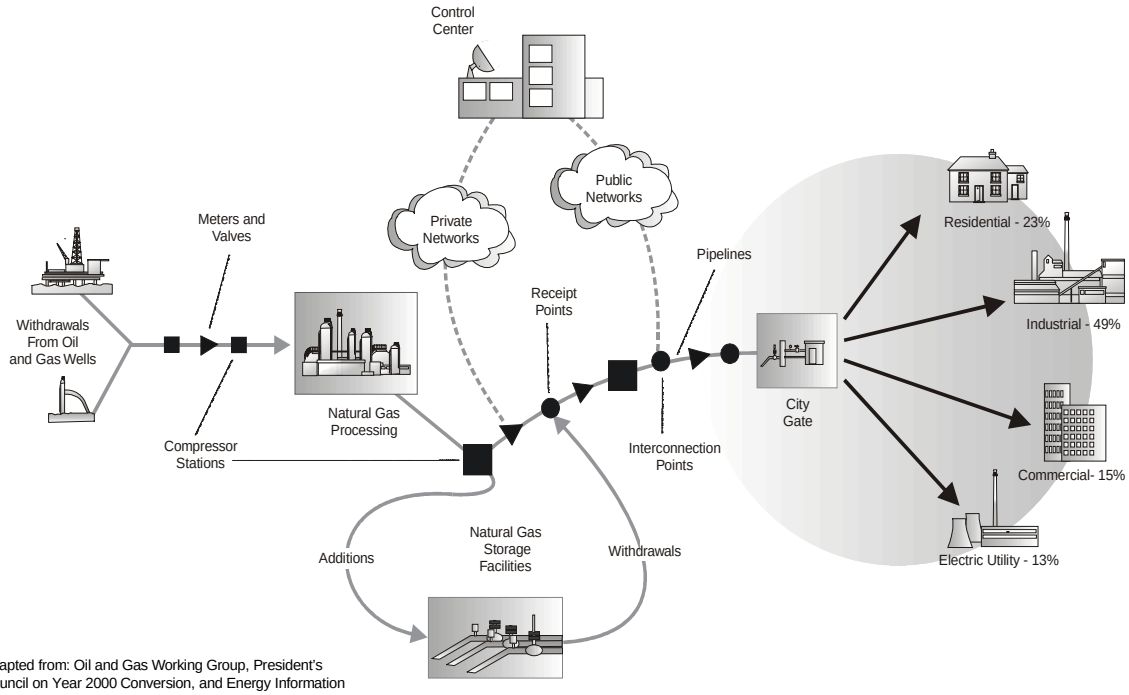
GAO Background - Natural Gas Flow, 1997



Adapted from: Oil and Gas Working Group, President's Council on Year 2000 Conversion, and Energy Information Administration

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GAO Background - Natural Gas Production and Gathering

Wellhead

Source: Energy Information Administration, Department of Energy

Natural gas is produced by major oil and gas companies as well as by small producers referred to as independent gas producers.

The large producers supply about one-third of the nation's natural gas.

The independent producers number about 10,000, and supply about two-thirds of the nation's natural gas.

From the wells, gas is pumped into gathering lines and transported to processing plants where impurities are removed. There are about 2,000 gas processing businesses in the nation.

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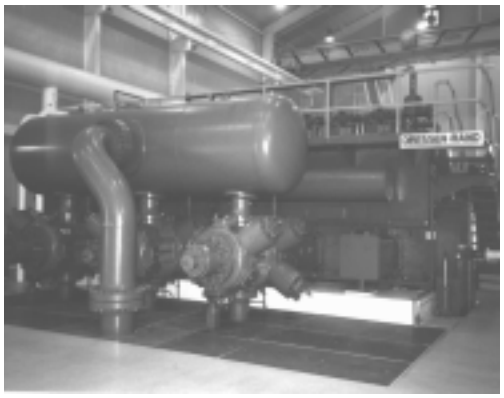
GAO Background - Natural Gas Transportation and Storage

Pipeline Gas Compressor



Interstate natural gas pipeline companies move the gas from production areas to market areas under contract to gas buyers, such as local distributors.

Some companies transport the gas directly to their own industrial and electric generation facilities.

About eight pipeline companies handle over 65 percent of the natural gas transported in the United States.

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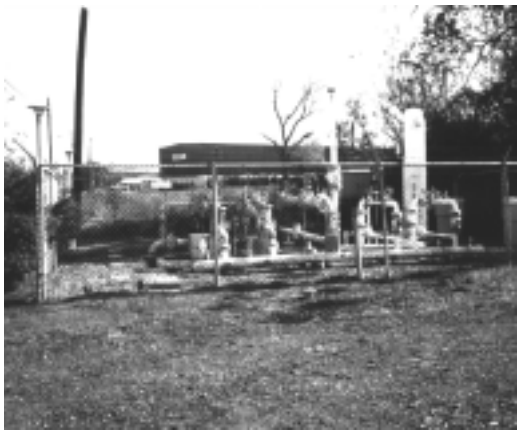
GAO Background - Natural Gas Distribution

City Gate



A city gate connects the local distribution system to the major supply pipeline.

Local gas distribution companies deliver natural gas from city gates to homes, businesses, and industrial plants.

There are two kinds of distributors: investor-owned, which total about 200 and account for over 90 percent of the distribution, and publicly owned, which number nearly 1,000.

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GAO Year 2000 Vulnerability

Control Center for Offshore Oil Platform Monitoring and Control

Year 2000 failures can occur at many links in the chain of oil and gas operations.

The oil and gas industries are dependent on control and embedded systems that are subject to Year 2000 failures. These systems include the

- Supervisory Control and Data Acquisition (SCADA), and
- embedded devices

These systems are present in all phases of the petroleum production cycle--oil and gas extraction, refining, transportation, and delivery.

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GAO Year 2000 Vulnerability (continued)

Remote Terminal Unit Controlling Motorized Gas Valve

SCADA systems monitor and control remote terminal units and equipment that may also have date-sensitive embedded systems.

Remote terminal units monitor and control a range of equipment, including motorized valves, switches, and other elements of oil and gas production.

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GAO Year 2000 Vulnerability (continued)

Computer-controlled Motorized Gas Valve

Embedded systems are also found in equipment throughout the extraction, refining, transportation, and delivery operations.

Embedded system containing "real-time clocks" may malfunction or cause equipment failures.

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GAO Year 2000 Vulnerability (continued)

Because over half of our oil is imported, the nation's oil industry is also vulnerable to Year 2000 risks in the production and transportation operations of other countries.

Imported oil is transported by pipelines and marine tankers. Modern tankers are heavily dependent on embedded systems for navigation and cargo management, which are subject to Year 2000 failures.

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GAO Federal and Industry Efforts to Assess Year 2000 Status

- The President's Council on Year 2000 Conversion has established an Oil and Gas Working Group, led by the Federal Energy Regulatory Commission (FERC), to assess the readiness of the oil and natural gas industries. Other federal members include the Department of Energy, the Department of Defense, the Department of Transportation, the Department of State, the Department of the Interior, and the General Services Administration.
- FERC has obtained the assistance of 25 industry associations to assess whether the nation's oil and gas industries are adequately prepared to address the Year 2000 problem.

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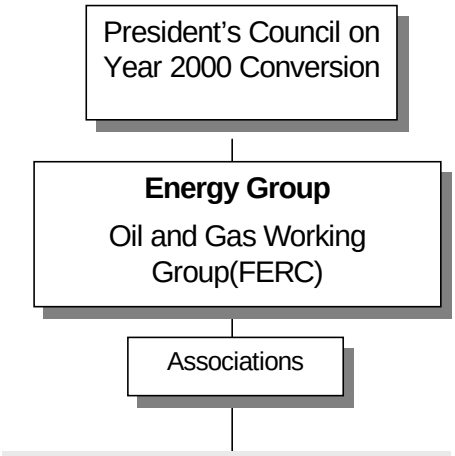
GAO Federal and Industry Efforts to Assess Year 2000 Status (cont'd)



- American Petroleum Institute (API)
- American Public Gas Association (APGA)
- American Gas Association (AGA)
- Interstate Natural Gas Association of America (INGAA)

Industry associations are surveying industry Y2K readiness status.

API - oil & natural gas producers, oil refiners, gas processors, oil pipelines, petroleum marketers, jobbers, and retail service stations.

APGA - publicly owned natural gas distribution companies.

AGA - investor-owned local natural gas distribution companies.

INGAA - interstate natural gas pipelines.

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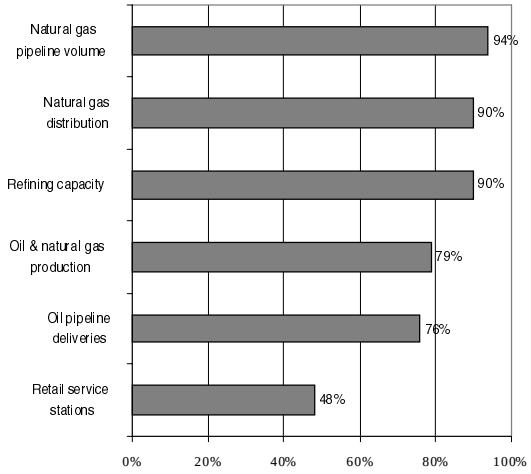
GAO Federal and Industry Efforts to Assess Year 2000 Status (cont'd)

Oil & Gas Industry Response Rate to Industry Associations' Year 2000 Survey



Response rates represent the percent of industry volume rather than the percent of companies responding.

In February 1999, the Oil & Gas Working Group issued the results of its second survey of Year 2000 readiness of the oil & gas industry.

On behalf of the Federal Energy Regulatory Commission and the President's Council on Year 2000 Conversion, the Group surveyed about 2,500 companies and received responses from about 1,000 companies representing about 88 percent of U.S. oil & gas consumption.

The survey did not include the Trans-Alaska pipeline, even though it delivers 20 percent of the nation's domestic oil.

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GAO Year 2000 Readiness

While the domestic oil and gas industries have reported progress in making their equipment and systems ready to continue operations into the Year 2000, significant risks remain.

Of the companies responding to the Working Group's survey, Year 2000 readiness for embedded systems was not expected to be achieved until the last half of 1999 for

- 26 percent of oil industry
- 31 percent of the interstate gas pipelines
- 25 percent of the investor-owned gas distribution companies
- 43 percent of the publicly owned gas distribution companies

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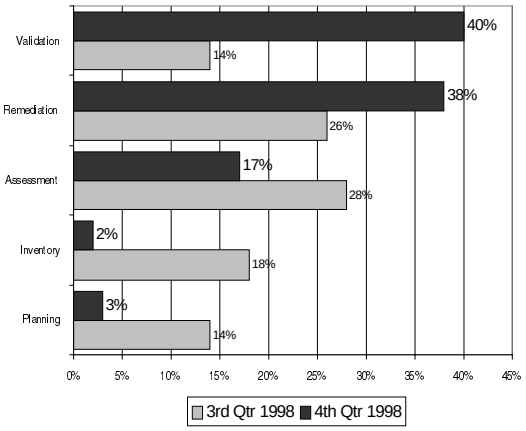
GAO Year 2000 Readiness - Embedded Systems

Year 2000 Status of Oil & Gas Industries' Embedded Systems



The industry's Year 2000 program consists of five sequential phases: (1) planning, (2) inventory, (3) assessment, (4) remediation, and (5) validation.

The oil and gas industries have reported that work on about 40 percent of embedded systems was in the validation phase as of January 1999.

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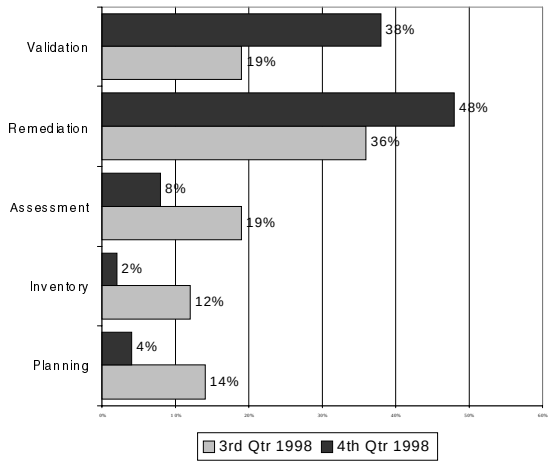
GAO Year 2000 Readiness - Business Systems

Year 2000 Status
of Oil & Gas Industries'
Business Systems



The oil and gas industries have reported that about 38 percent of business systems were in the validation phase as of January 1999.

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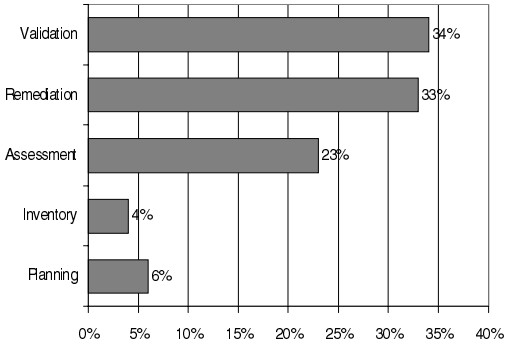
GAO Year 2000 Readiness -Supply Chain

Year 2000 Status of Oil & Gas Industries' Supply Chain

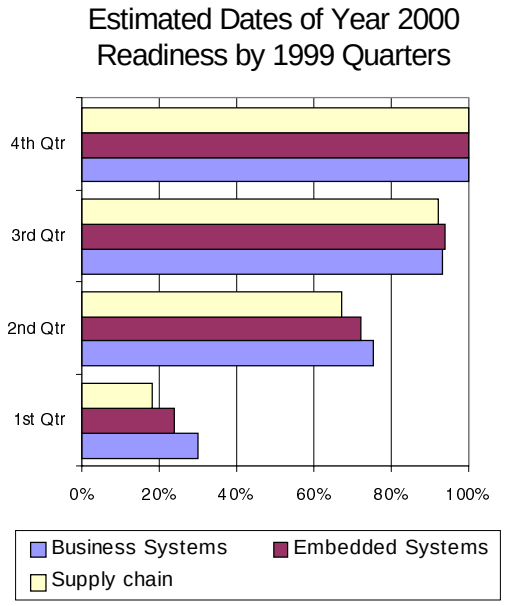


(First surveyed in 4th quarter 1998.)

The industries report that about 34 percent of their supply chain work is in the validation phase as of January 1999.

30

GAO Year 2000 Readiness - Estimated Dates of Readiness



Oil and gas industry surveys show that 72 percent of reporting companies expected to have their embedded systems Year 2000 ready in the 2nd quarter and 94 percent in the 3rd quarter of 1999.

The reported readiness of the oil industry and the readiness of the natural gas industry are shown separately on the next slides. Readiness information on the Trans-Alaska pipeline and foreign oil suppliers is also presented.

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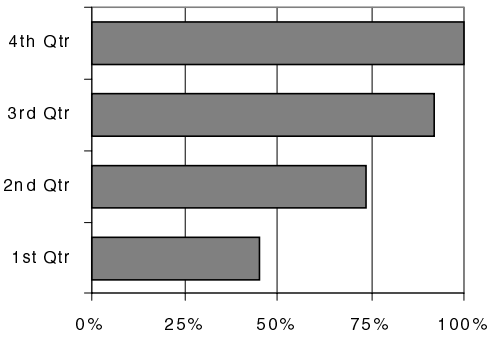
GAO Year 2000 Readiness - Oil Industry Estimated Dates of Readiness

Oil Industry Embedded Systems Estimated Dates of Year 2000 Readiness by 1999 Quarters



The oil industry expects to have about 74 percent of its embedded systems ready in June and 92 percent ready in September 1999.

The expected readiness dates for individual components of the industry--production, pipelines, refineries, and distribution--are not available.

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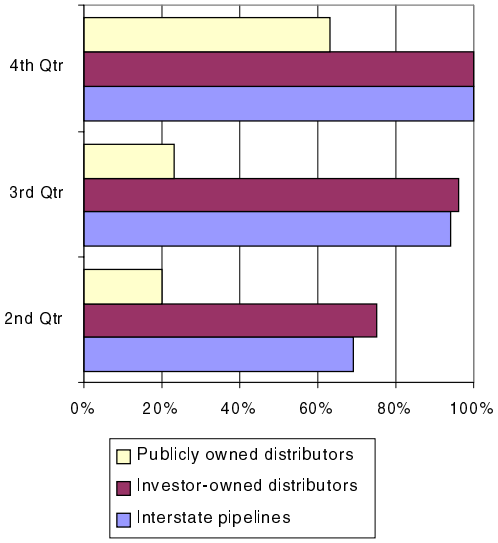
GAO Year 2000 Readiness - Natural Gas Industry Estimated Dates of Readiness

Gas Industry Embedded Systems Estimated Dates of Year 2000 Readiness by 1999 Quarters



Readiness of publicly owned distributors in the natural gas industry is uncertain based on the industry responses in the February 1999 status report.

The APGA survey stated that 37 percent of the publicly owned distributors did not provide an expected readiness date for embedded systems and only 23 percent of the respondents expected to be ready in September 1999.

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GAO Year 2000 Readiness -Alaska Pipeline

Trans-Alaska Pipeline

Source: U.S. Bureau of Land Management

Alyeska Pipeline Service Company, which manages the Trans-Alaska pipeline, has seven teams working on SCADA, pipeline control systems, supply chain, telecommunications, and other Year 2000 areas.

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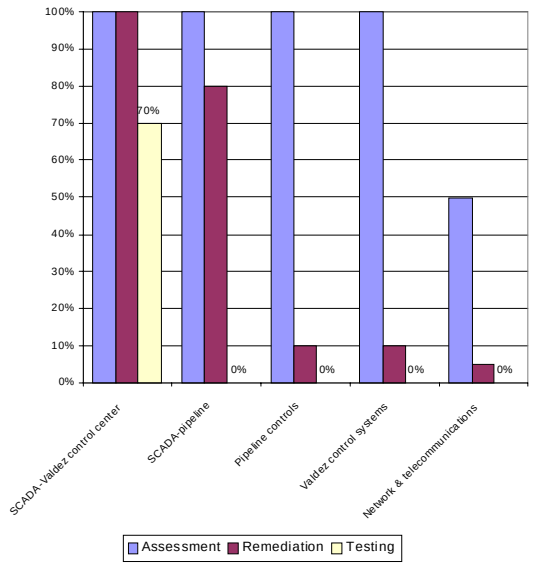
GAO Year 2000 Readiness -Alaska Pipeline

Year 2000 Readiness Status of Trans-Alaska Pipeline



Alyeska reported to us that as of March 1999 it had assessed all of its systems except for the network and telecommunications systems. It also reported completing the remediation work on its Valdez control center and SCADA and is in the process of replacing its network and telecommunications systems.

Alyeska expects that Trans-Alaska pipeline mission-critical systems will be 95 percent Year 2000 ready by the end of June and 100 percent ready by the end of September 1999.

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GAO Year 2000 Readiness - Oil Imports

Oil Tanker

Source: Energy Information Administration, Department of Energy

Little is known about the Year 2000 readiness of foreign oil suppliers.

The Oil and Gas Working Group has appointed a subgroup to collect Year 2000 readiness information on foreign oil suppliers. The group has no plans to issue a country-by-country assessment.

Oil can be supplied by the Strategic Petroleum Reserve if the flow of foreign oil is interrupted. The Reserve, with nearly 600 million barrels of oil, can supply--at a maximum sustained rate--about 3.9 million barrels per day for about 90 days and at a lesser rate for up to 2 years.

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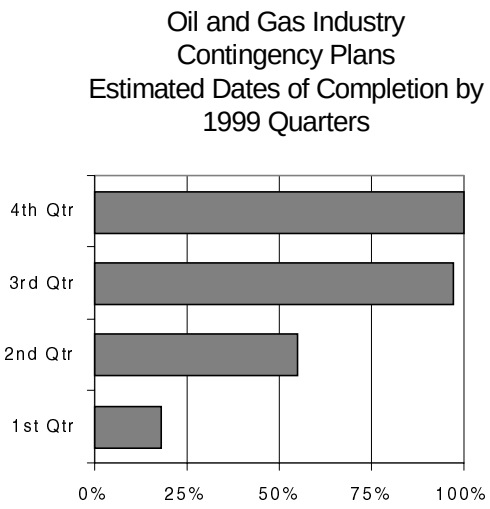
GAO Year 2000 Readiness - Contingency Planning



The oil and gas industries expect to have about 55 percent of their contingency plans ready in June and 97 percent ready in September 1999.

While individual companies are developing contingency plans, there are no plans to perform a national-level risk assessment and develop contingency plans to deal with potential shortages or disruptions in the nation's oil and gas supply.

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GAO Observations

According to the Oil and Gas Working Group, the oil and gas industries have made substantial progress in making critical equipment and systems Year 2000 compliant. However, the Group and the industry have not

- performed industrywide risk assessments and developed national-level scenarios for the impact of potential Year 2000 failures and
- developed national-level contingency plans for coping with potential oil and gas shortages.

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GAO Suggested Actions

Oil and Gas Working Group

To reduce the risk to the nation's oil and natural gas supply, we suggest that the Oil and Gas Working Group--comprised of officials representing the Federal Energy Regulatory Commission, the Department of Energy, the Department of Defense, the Department of Transportation, the Department of State, the Department of the Interior, and the General Services Administration--take the following actions:

- Work with industry associations to perform national-level risk assessments and develop and publish credible, national-level scenarios for the impact of potential Year 2000 failures on the oil and gas industries.
- Develop national-level contingency plans, including provisions for using the crude oil stored in the Strategic Petroleum Reserve to deal with potential interruption in oil imports.

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Major Contributors to This Report

Accounting and Information Management Division, Washington, D.C.

William G. Barrick, Senior Information Systems Analyst
Martin E. Caulk, Senior Computer Specialist (Systems Analyst)

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